

**IN THE CLAIMS:**

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1. (Canceled)
2. (Currently amended) The method according to claim ~~[[1]]~~ 22,  
~~characterized in that, using the light (7) projected by the video projector (P)~~  
wherein, by means of the image ~~[[I]]~~ projected by ~~[[it]]~~ the projector, ~~[[the]]~~  
modifying amplitude of portions of the wavefront ~~is modified in places~~.
3. (Currently amended) The method according to claim 2, ~~characterized in~~  
~~that~~ wherein parts of the holographic image are emphasized.
4. (Currently amended) The method according to claim ~~[[1,]]~~ 22 or 2 ~~[[or~~  
~~3]]~~, ~~characterized in that, using the light (7) of the video projector (P)~~  
wherein, by means of the image ~~[[I]]~~ projected ~~[[it]]~~ by the projector, the  
wavefront is partially reconstructed ~~in parts only~~.

5. (Currently amended) The method according to claim 2[[,]] or 3 [[or 4]], ~~characterized in that~~ wherein the computer graphics [[(G)]] content is arranged in areas of the hologram content [[(H)]] that are not reconstructed or are only partially reconstructed.

6. (Currently amended) The method according to claim 5, ~~characterized in that~~ comprising, for computing the illumination image [[(I)]] and the rendered computer graphics [[(R)]], providing a Z buffer, a stencil buffer and a frame buffer; ~~are used and~~

[[(-)] creating a texture (T) ~~is created~~ off-axis from the perspective of the observer [[(V)]] by

- a) clearing all buffers using black,
- b) writing the hologram content [[(H)]] into the Z buffer and the frame buffer,
- c) writing the graphics content [[(G)]] into the Z buffer and the stencil buffer using a Z buffer test,
- d) clearing the stencils in the frame buffer using black;

[[(-)] creating the illumination image (I) ~~is created~~ from the perspective of the video projector [[(P)]] by

- a) clearing all buffers using black,

b) writing the image of the hologram  $[(2)]$ , provided with the texture  $[(T)]$ , into the frame buffer; and  
 $[-]$  creating the rendered computer graphic  $(R)$  ~~is created~~ off-axis from the perspective of the observer  $[(V)]$  by

a) clearing all buffers using black,  
b) writing the hologram content  $[(H)]$  into the Z buffer,  
c) writing the graphics content  $[(G)]$  into the Z buffer and the frame buffer using a Z buffer test.

7. (Currently amended) The method according to claim 5, ~~characterized in that~~ comprising, for computing the illumination image  $[(I)]$  and the rendered computer graphics  $[(R)]$ , providing a Z buffer, a stencil buffer and a frame buffer ~~are used and~~,

$[-]$  creating a texture  $(T)$  ~~is created~~ off-axis from the perspective of the observer  $(V)$  by

a) clearing the Z buffer and the stencil buffer using black and filling the frame buffer with predefined color values,  
b) writing the hologram content  $[(H)]$  into the Z buffer,  
c) writing the graphics content  $[(G)]$  into the Z buffer and the stencil buffer using a Z buffer test,

d) clearing the stencils in the frame buffer using black;

[-] creating the illumination image ~~(I) is created~~ from the perspective of the video projector [(P)] by

a) clearing all buffers using black,

b) writing the image of a white rectangle, provided with the texture [(T)], into the frame buffer; and

[-] creating the rendered computer graphic [(R)] ~~is created~~ off-axis from the perspective of the observer [(V)] by

a) clearing all buffers using black,

b) writing the hologram content [(H)] into the Z buffer,

c) writing the graphics content [(G)] into the Z buffer and the frame buffer using a Z buffer test.

8. (Currently amended) The method according to ~~one of the preceding claims~~ claim 22, ~~characterized in that by modifying the amplitude of the wavefront wherein~~ by means of the illumination image [(I)] of the video projector [(P)], amplitude of the wavefront is modified and the illumination ~~situation~~ state of the holographic image is modified.

9. (Currently amended) The method according to claim 8, ~~characterized in that wherein~~ first ~~[[the]]~~ an original illumination ~~situation state~~ is computationally neutralized and then a new illumination image  $[[I]]$  is computed using a new illumination ~~situation~~ state.

10. (Currently amended) The method according to claim 9, ~~characterized in that wherein~~ the new illumination image  $[[I]]$  is computed by

$[[ - ]]$  computing two projections  $(i_1, i_2)$  of the hologram content  $[[H]]$  from the perspective of the video projector  $[[P]]$ , wherein diffuse white material is used for the hologram content  $[[H]]$  and shading and/or shadow-mapping computations are performed,

a) the first projection  $[[i_1]]$  is created using virtual light sources  $[[L]]$  causing approximately the same shadings on the hologram content  $[[H]]$  as the original light sources during hologram recording,

b) the second projection  $[[i_2]]$  is created using virtual light sources  $[[N]]$  causing the desired new illumination situation; and

$[[ - ]]$  computing a third projection  $[[i_3]]$  of the hologram  $[[2]]$  from the perspective of the video projector  $[[P]]$ , wherein diffuse, white material is used for the hologram and the projector comprises a point light source ~~at the location of the projector is taken into account; and~~

[[ - ]] computing the ratio of the ratios of the second  $[(i_2)]$  and the first  $[(i_1)]$  projection and the third projection  $[(i_3)]$ .

11. (Currently amended) The method according to claim 8, 9 or 10, ~~characterized in that~~ wherein the light effects in the rendered computer graphic (R), ~~as to the light effects, is rendered in correspondance with~~ correspond to the modified illumination situation state of the wavefront.

12. (Currently amended) The method according to ~~one of the preceding~~ claims claim 22 or 2, characterized in that, by further comprising providing a detection ~~facility,~~ device and by means thereof measuring the head and/or eye position of the observer  $[(V)]$  ~~is measured and incorporated~~ incorporating the measurement into the computation of the computer graphics  $[(R)]$  and/or of the illumination image  $[(I)]$  of the video projector  $[(P)]$ .

13. (Currently amended) The method according to ~~one of the preceding~~ claims claim 22 or 2, characterized in that further comprising providing an optically transparent layer and protecting and/or stabilizing the hologram (2)

~~is protected and/or stabilized by means of the~~ [[an]] optically transparent layer [[1]].

14. (Currently amended) The method according to ~~one of the preceding claims~~ claim 22 or 2, ~~characterized in that the~~ wherein the rendered computer graphics [[R]] is created stereoscopically, autostereoscopically or monoscopically.

15. (Currently amended) The method according to ~~one of the preceding claims~~ claim 22 or 2, ~~characterized in that~~ further comprising providing a lenticular lens sheet between the observer and the display and wherein the rendered computer graphics [[R]] is created stereoscopically and appears to be three-dimensional to the observer [[V]] through [[a]] the lenticular lens sheet ~~(4) arranged between him and the display (5)~~.

16. (Canceled)

17. (Currently amended) The ~~arrangement~~ apparatus according to claim [[16]] 23, ~~characterized in that~~ further comprising a lenticular lens

sheet (4) is arranged between the display [(5)] and the semi-transparent element [(3)].

18. (Currently amended) The arrangement apparatus according to claim [(16)] 23 or 17, ~~characterized in that the~~ further comprising a detection device for detecting head and/or eye position of [(an)] the observer (V) is detectable by a detection facility.

19. (Currently amended) The arrangement apparatus according to claim [(16)] 18, ~~characterized in that~~ wherein the detection facility device comprises a head-finder.

20. (Currently amended) The arrangement apparatus according to ~~one of the preceding claims~~ claim 23 or 17, ~~characterized in that~~ further comprising an optically transparent layer [(1)] [(is)] arranged at the hologram [(2)].

21. (Currently amended) The arrangement according to ~~one of the preceding claims~~ claim 23 or 17, ~~characterized in that~~ wherein the hologram [(2)] is a reflection hologram without darkening layer and is itself the semi-transparent element [(3)].



22. (New) A method for combining an optical hologram having a virtual content with computer graphics content thereby to produce an image in a display in which a holographic image of the hologram appears overlaid with the computer graphics, comprising providing a display, providing an optical hologram arranged between an observer and the display and having a virtual content, providing computer graphics content, providing a semi-transparent optical element interposed between the hologram and the display, providing a video projector for projecting an illumination image, illuminating the hologram by projecting an illumination image by means of the projector, reconstructing a holographic wavefront visible to the observer and, simultaneously therewith, displaying on the display rendered computer graphics rendered from the computer graphics content.

23. (New) Apparatus for combining an optical hologram having a virtual content with computer graphics content, comprising a display for displaying rendered computer graphics, an optical hologram arranged between an observer and the display, a semi-transparent optical element interposed between the hologram and the display and a video projector for illuminating the hologram by means of an illuminating image.